Invasive Plant Risk Assessment and Project Design Features

Somes Bar Integrated Fire Management Project, December 15, 2017

Addendum March 28, 2018

Methodology - Evaluation of Risk

Risk is evaluated in an assessment for this project based on five indicators: 1) presence of known invasive plant species in the project area, 2) habitat vulnerability, 3) non-project-dependent vectors such as existing roads or trails, adjacent private property, 4) habitat alteration expected as a result of project implementation, and 5) increased vectors as a result of project implementation.

Factor 1. Presence of known non-native invasive plant species identified as a Forest concern

HIGH risk: Adjacent and proximal to the Klamath River bar and Ca Hwy 96 and within the first 1.5-2.0 miles on roads that intersect with Hwy 96 there is a high cover and diversity of invasive species including himilayan blackberry, yellow starthistle, dyer's woad, dalamation toadflax, scotch broom, butterfly bush, tree heaven.

MODERATE risk: Areas in the mid to upper reaches of the respective watersheds where invasive plants exist as discrete sites (versus extensive coverage along miles of road) or within riparian areas under forested canopy. Locations representing moderate risk sites are in Table 1 of the Invasive Plant Risk Assessment. Species include primarily himilayan blackberry with relatively few sites of scotch broom, dyer's woad and tree-of-heaven.

LOW risk: Geographic areas within the focal areas where no invasive plants currently exist.

For this factor the project area falls within the Moderate to High risk.

Factor 2. Habitat vulnerability based on previous disturbance, plant cover, soil cover, shade, soil type, aspect/moisture

HIGH risk: Grasslands, oak woodlands, forested (harvested) areas with low canopy cover, early seral communities, road edges, turn-outs, new and existing landings, other mechanically disturbed areas, chronically disturbed areas (e.g. river bars, unstable slopes), riparian areas with moderate canopy cover that are close to roads, private property and burned areas

LOW risk: Areas of the project with moderate to high canopy cover that are not proximal to roads, private property, any access routes. This constitutes the majority of the project area.

For this factor, a majority of the project area falls within a Low risk.

Factor 3. Non-project-dependent vectors such as existing roads and trails, traffic use, livestock/wildlife migrations, wind patterns, drainage flow directions

HIGH risk: Ca State Hwy 96 and the Klamath River align units associated with three of the four focal areas are considered vectors for introduction and spread of invasive plants. Relative to Hwy 96, depending on where operations have occurred, heavy equipment used in road maintenance is a vector. Imported gravel or soil used in road maintenance can also introduce invasive plant seed. Seeds, stems or canes of invasive plants occurring on river bar reaches up river can be deposited downriver and become established. Private property inholdings and associated activities could also be a vector (e.g. planting of nursery stock that is invasive such as butterfly bush).

MODERATE risk: Wildlife migrations either by consumption of the fruit of invasives (i.e. himilayan blackberry) or via seed caught in the fur (i.e. spines of yellow starthistle).

LOW risk: Settings not identified above such as those intact forests.

For this factor, the project area falls within a Moderate to High risk.

Factor 4. Habitat Alteration Expected as a result of the Project such as logging prescriptions, road construction, fuels prescriptions, change in grazing management or recreation use, intensity and extent of disturbance

HIGH risk: Activities resulting in less than average 40% canopy cover and remnant native understory vegetation.

MODERATE risk: Activities that maintain an average 40-60% canopy cover and remnant native understory vegetation remaining. The prescription for mechanical treatments in this project is to maintain 40-60% residual canopy cover and establishment of retention areas throughout the units (which would include remnant native understory vegetation)

LOW risk: Activities that maintain more than an average 60% canopy cover and remnant understory vegetation

While none of the activities in this project would remove canopy cover to under 40% on average; removal may fall below this 40% threshold in particular areas (e.g. opening up canopy for focal tree species like black oak). For this factor, the project falls within a High risk if canopy cover is reduced below 40% in an area adjacent to invasive plant species.

The following activities propose a Moderate risk where invasive plant species are known to exist, with the exception of riparian areas, are settings along roads:

- mechanical thinning that removes native understory vegetation which functions as a barrier to movement of invasives from the road edge down into the unit, and
- manual fuels treatment (thinning and prescribed burning) or understory burning that removes native shrubs and trees (competitive vegetation) proximal.

A majority of the project activities will occur away from roads and settings where invasive plants are present; therefore, with the conditions described above relative to canopy cover retention, for this factor, the project falls within a Low Risk.

Factor 5. Increased Vectors as a result of Project Implementation such as road construction, facility construction, amount of project-related traffic

HIGH risk: Use of heavy equipment to implement activities in the mechanical and mastication units. Use of heavy equipment to re-open temporary roads, create new temporary roads or create new landings. Operating equipment in areas with a high cover of invasive species and then using that same equipment where invasive species do not currently exist.

LOW risk: No heavy equipment involvement.

Project activities that utilize heavy equipment, in particular equipment that has operating in areas of high invasive plant cover are considered a High risk.

Project activities associated with manual understory vegetation removal or thinning of small diameter trees as well as prescribed burning would be considered Low risk.

Determination of Risk

The project design features outlined in the Invasive Plant Risk Assessment are intended to address those factors with High or Moderate risk. It should be noted that the application of design features is setting dependent. An exception to the application of design features where there is High or Moderate risk of spread is the circumstance associated with units proximal or adjacent to CA Hwy 96, the Klamath River Bar and the first 1.5-2.0 miles on Forest Service roads that intersect with Hwy 96. In these settings, units that are currently dominated by a diversity of invasive plant species—the risk of spread will remain high regardless of the proposed action; therefore, project design features do not focus on these already compromised areas. In this setting, the risk of introduction and spread will remain high.

With the exception described above, implementation of the project design features or prescriptions and monitoring will reduce the risk of introduction and spread of invasive plant species from a high risk to a low risk where roadside invasive occurrences are small in size and discrete and to a moderate risk where occurrences are moderate in size or associated with riparian areas adjacent to roads.

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